PostScript

LETTERS

Bloodless treatment of infants with haemolytic disease

It was interesting to read an excellent review in the January 2004 edition of *Archives* devoted to the topic of blood transfusion.[1] At the same time the issues of haemolytic disease in the newborn (HDN) and alternatives to exchange transfusion (ET), were treated as follows: ''A recent systematic review has shown that fewer infants require exchange transfusion for haemolytic disease of the newborn when high dose intravenous immunoglobulin is used''.[2] Neonatologists generally applaud the efforts made in an attempt to achieve a ''bloodless'' solution to the treatment of Rh and/or AB0 HDN in a newborn whose parents are Jehovah's Witnesses.

In 1999 we published a case of an AB0 incompatible term infant girl born to parents who were Jehovah's Witnesses.[3] The infant was admitted to our neonatal unit with a high serum bilirubin level necessitating ET. The parents signed a request that blood should not be administered under any circumstances. However, they authorised the use of alternative treatments: orally administered D-penicillamine (DPA) (300 mg/kg per day divided into three doses over three days), phototherapy, intravenous fluids, and recombinant human erythropoietin (200 U/kg subcutaneously on every second day for two weeks). Furthermore, we reported the outcome of this infant, who was discharged from the unit in good health following treatment. Her physical growth and motor milestones at 3 years of age revealed no red flags for neurodevelopmental maturation. In addition, the follow up audiometric tests performed on this infant were normal. To our knowledge, this was the first case of an infant who received such a combined alternative (and ''bloodless'') treatment for serious AB0 HDN.

As far as the mechanisms of action of DPA in AB0 HDN are concerned, it proved to be a potent inhibitor of haem oxygenase (HO),[4] the rate limiting enzyme in haem catabolism to bile pigments, only in neonates. Therefore, this drug can moderate the postnatal formation of plasma bilirubin. The use of DPA in combination with phototherapy seems to be an appropriate combination in diminishing the intensity of hyperbilirubinaemia; because DPA decreases bilirubin production simultaneously, by its antioxidant effects, DPA is able to prevent the possible adverse side effects of phototherapy that have been shown in vitro and most recently in vivo.[5]

Another possibility in reducing the need for ET in neonates with proven HDN due to Rh and/or AB0 incompatibility, is the use of high dose intravenous immunoglobulin (HDIVIG) as was mentioned by Bolton-Maggs and Murphy.[1] Readers will surely recognise that HDIVIG is a blood product, and is consequently unacceptable to Jehovah's Witness families. Note also that the cost of DPA treatment (about US$2 or €1.5 per patient) is considerably less than HDIVIG.

Although the efficacy of DPA in reducing jaundice was first shown in the 1970s, this drug does not seem to have gained acceptance in the international neonatal community. The lack of ''acceptance'' of DPA treatment seems sadly parochial to us, because this therapy has been used extensively in Hungary for nearly 30 years. In our own experience, more than 20 000 neonates have been treated without side effects.

The successful use of erythropoietin in the treatment of severe anaemia in a neonate, reported in our paper,[3] should also be of considerable practical interest to your readers.

L Lakatos
Kenezy County Hospital, Debrecen, Hungary; lakatosl@kenezykorhaz.hu

doi: 10.1136/adc.2004.053215

References

1 **Bolton-Maggs PHB**, Murphy MF. Blood transfusion. *Arch Dis Child* 2004;**89**:4–7.
2 **Gottstein R**, Cooke RW. Systematic review of intravenous immunoglobulin in haemolytic disease of the newborn. *Arch Dis Child Fetal Neonatal Ed* 2003;**88**:F6–10.
3 **Lakatos L**, Csathy L, Nemes E. ''Bloodless'' treatment of a Jehovah's Witness infant with AB0 hemolytic disease. *J Perinatol* 1999;**19**:530–3.
4 **Oroszlan Gy, Lakatos L, Szabo I**. Heme oxygenase activity is decreased by D-penicillamine in neonates. *Experientia* 1983;**39**:888–9.
5 **Yeo KL**, Perlman M, Hao Y, *et al*. Outcomes of extremely premature infants related to their peak serum bilirubin concentrations and exposure to phototherapy. *Pediatrics* 1998;**102**:1426–31.

Ethnic group differences in overweight and obese children with type 1 diabetes mellitus

We read with interest the paper by Saxena *et al* who report differences in prevalence of overweight and obesity in children of different ethnic groups.[1]

The increased prevalence of overweight in adolescents with type 1 diabetes[2] and among South Asian and Afro-Caribbean children with type 2 diabetes[3] is well recognised. However, little information exists on the differences in obesity between white Caucasian and South Asian children with type 1 diabetes.

We conducted a retrospective analysis of the children with type 1 diabetes in our centre in Leicestershire, with an estimated proportion of South Asians in the city of Leicester of 28% (Census 2001). Our aim was to study the rates of obesity/overweight in white Caucasian and South Asian groups, and to correlate these with age, duration of diagnosis, daily insulin requirement, and HbA1c. We included children between the ages of 2 and 18 years and who had been diagnosed more than a year ago.

Data were collected for 150 children; 25% (38/150) of our study population were South Asians, with the remainder being white Caucasians. There were similar numbers of females and males represented (74 and 76 respectively).

Overall, 35% (n = 53) of children with type 1 diabetes in our centre were either overweight (>91st centile on BMI charts[4]), or obese (>95th centile), with 18% (n = 27) of the total being obese. This compared to 23% overweight and 6% obese, respectively, in the study by Saxena *et al*. None of the children under the age of 4 years were overweight/obese. All the other three age groups from our service showed a higher prevalence of obesity compared to the data from Saxena *et al* (table 1). There was no significant difference in the proportion of overweight (19% *v* 16%, p = 0.61) or obesity (16% *v* 20%, p = 0.57) between girls and boys.

There were no statistically significant differences in the rates of overweight or obesity between white Caucasian and South Asian children at any age grouping.

Furthermore, there was no significant difference in the two subgroups in relation to age, duration of diagnosis, daily insulin requirement, and metabolic control (median HbA1c 8.4% *v* 8.8% respectively).

In conclusion, just as there is a worrying high and increasing level of overweight and obesity in the general population,[1] we have confirmed that this is an even greater problem in children and adolescents with diabetes in both our major ethnic groups. The concerns expressed by Saxena and colleagues[1] are even greater in children with diabetes because of the adverse cardiovascular prognosis for young people with type 1 diabetes.[5]

Table 1 Prevalence of obesity and overweight in children with type 1 diabetes mellitus

		Overweight		Obesity	
Factors	n	n	%	n	%
Age group (y)					
2–4	3	0		0	
5–9	33	6	18	6	18
10–15	90	14	15	16	17
16–18	24	6	25	5	21
Sex					
Male	76	12	16	15	20
Female	74	14	19	12	16
Total group	150	26	17	27	18